



## Diurnal variation in airborne pollen concentrations of the selected Taxa in Zagreb, Croatia

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### Abstract:

The number of individuals allergic to plant pollen has recently been on a constant increase. The knowledge of diurnal distribution and abundance of allergenic pollen types, their patterns and response to source position and weather is useful to correlate hay fever symptoms with the presence of allergenic pollen in the atmosphere. The aim of this study was to determine diurnal distribution of total airborne pollen, pollen of particular allergenic taxa, possible variation in diurnal pollen distribution at measuring sites placed at different heights, and effect of some meteorological parameters on airborne pollen concentrations. A 7-day Hirst-type volumetric pollen trap was used for pollen sampling. Qualitative and quantitative pollen analysis was performed under a light microscope (magnification x400). Total pollen of all plant taxa (Ambrosia sp., Betula sp., Cupressaceae, Urticaceae, Poaceae, Quercus sp., Fraxinus sp., Alnus sp., Corylus sp., Populus sp., Pinus sp., Picea sp.) observed showed a regular diurnal distribution at both sampling sites in both study years, with a rise in the pollen concentration recorded after 4.00 a.m. and 6.00 a.m., respectively. The peak pollen concentration occurred between 12.00 a.m. and 4.00 p.m., and the lowest diurnal pollen concentrations were recorded overnight. About 50% of the 24-h pollen concentration were released to the atmosphere between 10.00 a.m. and 4.00 p.m. The timing and size of diurnal peaks were closely related to high temperature, low humidity and south-west maximum wind direction.

**Source:** <https://www.ncbi.nlm.nih.gov/pubmed/22220402>

### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Meteorological Factors, Temperature

**Air Pollution:** Allergens

**Temperature:** Extreme Heat

#### Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

#### Geographic Location:

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resource focuses on specific location

Non-United States

**Non-United States:** Europe

**European Region/Country:** European Country

**Other European Country :** Croatia

**Health Impact:** ☒

specification of health effect or disease related to climate change exposure

Respiratory Effect

**Respiratory Effect:** Upper Respiratory Allergy

**Mitigation/Adaptation:** ☒

mitigation or adaptation strategy is a focus of resource

Adaptation

**Resource Type:** ☒

format or standard characteristic of resource

Research Article

**Timescale:** ☒

time period studied

Time Scale Unspecified

**Vulnerability/Impact Assessment:** ☒

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content